

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1 to 97 (cancelled)

98. (withdrawn) Apparatus for controlling the temperature of a target animal at a given location comprising:

- a. a sprayer including means for attaching to a fixed support for pivotal movement about a first axis and for mounting for pivotal movement about a second axis of different orientation from the first axis;
- b. said sprayer comprising a motor driven fan having an axis of rotation, an air inlet, an air discharge and including fan blades, a hub, a guard grill, and a nozzle unit symmetrically fixedly mounted relative to the axis of rotation of the fan on one of the grill and hub on the discharge side of the fan without any substantial interference with the air discharge;
- c. said nozzle unit including means for receiving liquid, at least one liquid inlet to the means for receiving liquid and at least one nozzle outlet directed downstream of the fan, and a removable elongated nozzle mounted in the nozzle outlet;
- d. the sprayer being constructed and arranged to generate, at the air discharge of the fan, an air stream having a velocity of up to 20 m/sec, and to generate and propel, from the removable elongated nozzle, a mist stream of a beam-like quality centrally within the air stream that will be confined and maintained and entrained by the air stream, said mist stream having a measurable and controllable lateral dimension so that it can be accurately directed to a target animal, and being contained to a defined diameter of up to 7 meters for a target animal located a maximum distance of 16 meters from the fan by introducing liquid under pressure of from about 2 atm to about 6 atm into the liquid inlet of nozzle unit at a rate of from about 5 l/hr to about 50 l/hr;
- e. a control valve to control liquid admitted to the liquid inlet of the nozzle unit;

- f. delivery means for delivering liquid under pressure via said control valve to the at least one liquid inlet of the nozzle unit;
- g. sensing means for sensing a condition relative to a target animal location; and
- h. control means responsive to said sensing means for controlling one of delivery of liquid to said at least one liquid inlet of the nozzle unit and the relative position of the sprayer with respect to a target animal location.

99. (withdrawn) Apparatus according to claim 98 wherein the sensing means senses time and said control means operates said delivery means intermittently.

100. (withdrawn) Apparatus according to claim 98 wherein the sensing means is a device for sensing an ambient condition.

101. (withdrawn) Apparatus according to claim 98 further including a controller for controlling the fan motor.

102. (withdrawn) Apparatus according to claim 98 wherein the first axis is a vertical axis and the second axis is a horizontal axis, and further including means for rotating the sprayer about the vertical axis.

103. (withdrawn) Apparatus according to claim 102 further including an elongated cross member having one end pivotally attached about the first axis to a fixed support and its other end attached to the sprayer.

104. (withdrawn) Apparatus according to claim 103 wherein the cross member is adjustable with respect to the fixed support.

105. (withdrawn) Apparatus according to claim 103 further including means for constraining pivotal movement of the cross member to 90 degrees.

106. (withdrawn) Apparatus according to claim 103 further including means for constraining pivotal movement of the cross member to 180 degrees.

107. (withdrawn) Apparatus according to claim 103 wherein the first end of the cross member is at a higher elevation than the second end whereby operation of the fan moves the cross arm to one position, and varying operation of the fan allows the cross arm to move by gravity to a second position.

108. (withdrawn) Apparatus for controlling the temperature of a plurality of target animals at a plurality of given locations comprising:

A. a network of operative devices each associated with one of the plurality of target

animals, each operative device comprised of

- i. a sprayer including means for attaching to a fixed support for pivotal movement about a first axis and for mounting for pivotal movement about a second axis of different orientation from the first axis;
- ii. said sprayer comprising a motor driven fan having an axis of rotation, an air inlet, an air discharge and including fan blades, a hub, a guard grill, and a nozzle unit symmetrically fixedly mounted relative to the axis of rotation of the fan on one of the grill and hub on the discharge side of the fan without any substantial interference with the air discharge;
- iii. said nozzle unit including means for receiving liquid, at least one liquid inlet to the means for receiving liquid and at least one nozzle outlet directed downstream of the fan, and a removable elongated nozzle mounted in the nozzle outlet;
- iv. the sprayer being constructed and arranged to generate, at the air discharge of the fan, an air stream having a velocity of up to 20 m/sec, and to generate and propel, from the nozzle outlet of the at least one nozzle, a mist stream of a beam-like quality centrally within the air stream that will be confined and entrained by the air stream with said mist stream having a measurable and controllable lateral dimension so that it can be accurately directed to a target animal at a given location, the mist stream having a defined diameter of up to 7 meters for a target animal located a maximum distance of 16 meters from the fan by introducing liquid under pressure of from about 2 atm to about 6 atm into the liquid inlet of nozzle unit at a rate of from about 5 l/hr to about 50 l/hr; and
- v. a control valve to control liquid admitted to the liquid inlet of the nozzle unit;
- vi. delivery means for delivering liquid under pressure in parallel via said control valves to the at least one liquid inlet of the nozzle units of said operative devices;
- vii. sensing means for sensing a condition relative to target animal location; and
- viii. control means responsive to said sensing means for controlling one of delivery of liquid to said operative devices and the relative position of the sprayer of each operative device with respect to its associated target animal location.

109. (withdrawn) Apparatus according to claim 108 wherein the sensing means senses time and said control means operates said delivery means intermittently.

110. (withdrawn) Apparatus according to claim 108 wherein the sensing means senses an ambient condition including at least one of humidity, wind speed and wind direction.

111. (withdrawn) Apparatus according to claim 108 further including a controller for controlling the fan motor.

112. (withdrawn) Apparatus according to claim 108 wherein the first axis is a vertical axis and the second axis is a horizontal axis, and further including means for rotating the sprayer about the vertical axis.

113. (withdrawn) Apparatus according to claim 112 further including an elongated cross member having one end pivotally attached about the first axis to a fixed support and its other end attached to the sprayer.

114. (withdrawn) Apparatus according to claim 113 wherein the cross member is adjustable with respect to the fixed support.

115. (withdrawn) Apparatus according to claim 113 further including means for constraining pivotal movement of the cross member to 90 degrees.

116. (withdrawn) Apparatus according to claim 113 further including means for constraining pivotal movement of the cross member to 180 degrees.

117. (withdrawn) Apparatus according to claim 113 wherein the first end of the cross member is at a higher elevation than the second end whereby operation of the fan moves the cross arm to one position, and stopping operation of the fan allows the cross arm to move by gravity to a second position.

118. to 137 (cancelled)

138. (new) Method for controlling the temperature of a target animal at a given location comprising the steps of:

- a. generating, downstream from a motor driven fan, an air stream having a central axis and a maximum velocity of 20 m/sec, a relatively high pressure portion and a relatively low pressure portion being formed in said air stream such that the low pressure portion coincides with the central axis of the air stream immediately downstream from the fan;

- b. generating in said low pressure portion, a mist stream having measurable and controllable upstream and downstream lateral dimensions centrally within the air stream symmetrically about its central axis that will be confined and entrained by the air stream so that it can be accurately directed to a target animal at a given location, the mist stream maintaining a maximum defined downstream lateral dimension of 7 meters for a target animal located a maximum distance of 16 meters from the low pressure portion by spraying, in the direction of the air stream, liquid under pressure of from about 3 atm to about 6 atm at a rate of from about 5 l/hr to about 50 l/hr;
- c. delivering liquid to said low pressure portion;
- d. controlling liquid at said low pressure portion;
- e. sensing a condition relative to a target animal location; and
- f. controlling, responsive to said sensing, one of delivery of liquid to the point of mist generation and the relative angle of the axis of the air stream with respect to a target animal location.

139. (new) Method according to claim 138 wherein sensing includes timing the mist generation and wherein the delivering of liquid is operated intermittently.

140. (new) Method according to claim 138 wherein sensing includes determining an ambient condition.

141. (new) Method according to claim 138 further including controlling an aspect of the air stream generation.

142. (new) Method according to claim 138 further includes adjusting the central axis of the air stream about a first axis and a second axis, both different in orientation from the central axis of the air stream. further including means for rotating the frame about the vertical axis.

143. (new) Method according to claim 142 including the step of rotating the central axis about at least one of the first and second axis.

144. (new) Method according to claim 138 including the steps of supporting said point of generation of the air stream spaced relative to a fixed point, and adjusting said point of generation with respect to the fixed point.

145. (new) Method according to claim 144 wherein the adjusting includes constraining

pivotal movement of the point of generation of the air stream to 90 degrees.

146. (new) Method according to claim 144 wherein the adjusting includes constraining pivotal movement of the point of generation of the air stream to 180 degrees.

147. (new) Method according to claim 145 wherein the adjusting includes moving the point of generation of the air stream to one position by differential pressure and to a second position by gravity.

148. (new) Method for controlling the temperature of a plurality of target animals at a plurality of given locations comprising the steps of:

- a. establishing a network of points each of which is downstream from a corresponding motor driven fan and separated from a plurality of target animals at a plurality of given locations for generating an air stream at each point, each point associated with one of the plurality of target animals;
- b. generating, at each point, an air stream having a central axis and a maximum velocity of 20 m/sec, a relatively high pressure portion and a relatively low pressure portion being formed in each air stream such that the low pressure portion coincides with the central axis of the air stream immediately downstream from the corresponding fan;
- c. generating at the relatively low pressure portion of each air stream, a mist stream having measurable and controllable upstream and downstream lateral dimensions centrally within the air stream symmetrically about its central axis that will be confined and entrained by the air stream so that it can be accurately directed to a target animal at a given location, each mist stream maintaining a maximum defined lateral dimension of 7 meters for a target animal located a maximum distance of 16 meters from the point of generating the mist stream by spraying in the direction of the air stream liquid under pressure of from about 3 atm to about 6 atm at a rate of from about 5 l/hr to about 50 l/hr;
- d. delivering liquid to the point of generating each mist stream;
- e. controlling liquid at each point of generating the mist stream;
- f. sensing a condition relative to target animal location; and

g. controlling, responsive to said sensing, one of delivery of liquid to each point of mist generation and the relative angle of the axis of the air stream at each point with respect to its associated target animal location.

149. (new) Method according to claim 148 wherein sensing includes timing the mist generation, and controlling delivery of liquid intermittently.

150. (new) Method according to claim 148 wherein sensing includes determining an ambient condition.

151. (new) Method according to claim 148 further including controlling an aspect of the air stream generation.

152. (new) Method according to claim 148 further includes adjusting the central axis of each air stream about a first axis and a second axis, both different in orientation from the central axis of the air stream.

153. (new) Method according to claim 152 including the step of rotating the central axis about at least one of the first and second axis.

154. (new) Method according to claim 148 including the steps of supporting each said point of generation of the air stream spaced relative to a fixed point, and adjusting said point of generation with respect to the fixed point.

155. (new) Method according to claim 154 wherein the adjusting includes constraining pivotal movement of the point of generation of the air stream to 90 degrees.

156. (new) Method according to claim 154 wherein the adjusting includes constraining pivotal movement of the point of generation of the air stream to 180 degrees.

157. (new) Method according to claim 155 wherein the adjusting includes moving the point of generation of the air stream to one position by differential pressure and to a second position by gravity.